guage, and continuing our cooperation with the Chinook tribal heritage committee to present information about Cathlapotle at events such as pow wows and history festivals.

As a result of our outreach efforts over the years, we have reached thousands of children and adults who knew little, if anything, about the cultural history in their community. What we've done at Cathlapotle can and probably has been done to varying degrees at many other archeological sites. The outcomes this type of project produces benefit both the specific cultural resource management program and the science of archeology as a whole. They are also within easy grasp.

Archeology, when shared with the public, inspires excitement about the past and enthusiasm for protecting cultural resources. These lines, written by the late Chinook poet Ed Nielsen after visiting the excavation at Cathlapotle, illustrate the power of a positive experience.

...In the shadows of trees
students of Archaeology
bring to present light
the past people's living
These are My People's
Lives buried in this
Sacred Land, Sacred Soil!
This is the Chinookan History
coming to a very different
Time's sight
green tree limbed
shadow summered light
in the digs, ridges
of long extinct fires
soil shadows
layers of debris
we stand in this place
of past living
but life is here again
The Chinookan History is once again
given back to Us!...

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Janet R. Balsom

Staying Upright

Reflections on the Section 106 Process and the Glen Canyon Dam Cultural Program

Management of cultural resources along the Colorado River is complicated not only by the naturalized system, but by competing responsibilities and interests of federal and state agencies and Indian tribes. Utilizing the National Historic Preservation Act (NHPA), the Bureau of Reclamation (Reclamation) and the National Park Service (NPS) developed a management partnership with all of the entities retaining oversight and interest in the Section 106 process. This process, detailed in the programmatic agreement regarding Glen Canyon Dam Operations, marks a turning point in federal agency responsibilities related to Glen Canyon Dam under NHPA. Implementation of the program is the challenge discussed in this article.

Glen Canyon Dam was completed by Reclamation in 1963 as a feature of the Colorado River Storage Project (CRSP). The underlying project purposes are defined by Section 1 of the Colorado River Storage Project Act of 1956 (43 U.S.C. 617), which authorized the Secretary to construct, operate, and maintain Glen Canyon Dam. The purposes include "regulating the flow of the Colorado River, storing water for beneficial consumptive use, making it possible for the states of the Upper Basin to utilize the apportionments made to and among them, respectively, providing for the reclamation of arid and semiarid land, for the control of floods, and for the generation of hydroelectric power, as an incident of the foregoing purposes"

Even though power generation was incidental to other purposes, Glen Canyon Dam has been operated primarily for power generation. Drastic fluctuations in river flow from the dam mirrored electrical power needs in the urban centers of the west. These fluctuating flows caused visible changes to the ecosystem of the river, eroding camping beaches and endangering native fish species. Because Glen Canyon Dam was com-

pleted prior to enactment of the National Environmental Policy Act (NEPA), no Environmental Impact Statement (EIS) was filed regarding construction or operation of the dam, nor was any consideration given to potential impacts to historic properties affected by dam operations.

In the past, Reclamation projects were constructed, dams built, and cultural resources submerged under newly created lakes. No evaluation of resource damage was possible for those projects that were unevaluated since the archeological sites were submerged under hundreds of feet of water. The Glen Canyon Dam program provided an opportunity to utilize the procedures in 36 CFR Part 800 to evaluate a federal undertaking, in this case the building and operation of Glen Canyon Dam, "not previously considered under Section 106." The Colorado River presented an unusual situation in that not only was one dam completed which had resultant impacts that were not evaluated, but another dam was proposed that was never built. The historic site of the proposed Marble Canyon Dam is one of the few places where the remains of Reclamation construction facilities were not obliterated by dam construction. Although the site is less than 50 years old, it is significant to the history of the modern environmental movement and the dam building era in this country. It has been determined eligible for listing on the National Register of Historic Places as part of the larger Colorado River corridor through Grand Canyon.

While cultural resource preservation laws mandate the consideration of cultural resources on federal lands potentially impacted by federal undertakings, additional laws have authority when issues pertain to the Colorado River. Referred to as the "Law of the River," these authorities represent a collection of federal and state statutes, compacts, court decisions and decrees, federal contracts, a treaty with Mexico, and formally determined long-range operating criteria which define the operation and management of the Colorado River. In carrying out the Section 106 program related to the operation of Glen Canyon Dam, we found the guidance provided by the Advisory Council to be invaluable. Cultural resources had to be considered on equal footing with the other legal mandates. Up until this time, there had been no consideration of the effects to cultural resources from the dam. Studies had been on-going for over 10 years related to natural resource components of the system, but nothing had been done related to cultural resources or tribal concerns. Reclamation and the other agencies involved in the process at that time did not want to include cultural resources in the program; they did not understand the connection between river flow and cultural resources. It was only the legal mandate that opened the door for evaluation of cultural resources as influenced by Glen Canyon Dam. The Council was a strong and vocal advocate of insuring the process was addressed appropriately and that all resources were considered.

Reclamation initiated a series of studies referred to as the Glen Canyon Environmental Studies (GCES) in 1982 in response to concerns raised by agencies, Indian tribes, and the public over proposed uprating and rewinding of the generators at Glen Canyon Dam and potential impacts to downstream natural resources. These studies were designed to evaluate the effects of low and fluctuating flows caused by Glen Canyon Dam operations. These studies were confined to natural resource related research and focussed mainly on impacts to fisheries and camping beaches. Shortly after the initiation of research associated with GCES, Glen Canyon Dam began spilling water, with a maximum flow of 93,000 cfs achieved in July of 1983. The spill was the result of a combination of dam management practices and high spring run-off in the upper basin, resulting in a high reservoir that could not accommodate the inflow into Lake Powell. Water releases above power plant capacity were continuous for nearly four years, with documented detrimental impacts to many of the downstream resources. The first documentation of damage to cultural resources was in September of 1983.

Public concerns about possible increases in peaking power generation at Glen Canyon Dam continued to be expressed, eventually leading to former Secretary of the Interior Manuel Lujan directing Reclamation to prepare a full EIS on the operations of Glen Canyon Dam. The purpose of the EIS was to determine specific options that could be implemented to minimize—consistent with law—adverse impacts on the downstream environmental and cultural resources, as well as to Native American interests in Glen and Grand canyons. The direction for the EIS was the first time cultural resources were identified as having potential impacts downstream from dam operations.

In addition to the evaluation called for by the EIS, Congress passed the Grand Canyon Protection Act (P.L. 102-575) on October 30, 1992. Section 1802 (a) of the act requires the Secretary to

> ... operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in section 1804 and exercise other

authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreational Area were established, including, but not limited to natural and cultural resources and visitor use.

In addition to NHPA requirements for federal agencies to evaluate the effects of their projects on cultural resources, the Grand Canyon Protection Act (GCPA) prescribes management of the dam for the protection of cultural resources. Rarely in federal land management are cultural resource concerns placed at the forefront of management of a "natural system." The draft versions of the GCPA did not include cultural resources. We were able to include cultural resources into the language at the last minute, a situation that allowed us to consider cultural resources on par with natural resources and recreational values.

For the purposes of this project, the federal agencies, Arizona State Historic Preservation Officer, Advisory Council on Historic Preservation, and the participating tribes (Hopi, Hualapai, Kaibab Paiute, Paiute Indian tribe of Utah, San Juan Southern Paiute, Navajo, and Zuni) agreed that operation of the dam would have "no adverse effect" on historic properties based on a long-term monitoring and remedial action program which is described in the Historic Preservation Plan for Glen Canyon Dam operations. Implementation of the plan completes Reclamation's responsibilities for compliance under Section 106 of NHPA.

In many federally funded projects, it is the archeological work or Section 106 reviews that are blamed for holding up projects. In the Glen Canyon Dam program, the cultural component represents the only major component that was completed prior to the Record of Decision (ROD) for the EIS. Although research on endangered species, biological response, geomorphology, sediment transport, and water related issues was begun with Phase I of the Glen Canyon Dam Environmental Studies in 1982, little definitive information was available for the EIS when it was written in the early 1990s. For this EIS, the cultural component was completed before most of the other resource work, even though it was begun long after research was initiated for most other resource areas. Reclamation and the Fish and Wildlife Service are still discussing components of the Biological Opinion, three years after the ROD was signed.

Prior to the initiation of the archeological survey, the NPS coordinated a field review of the river corridor with the representatives of the affiliated tribes, SHPO, and the Council. This trip was the first of many river trips, some done with many tribes, others done independently by each tribe, to evaluate areas of concern along the river. These trips allowed all of those involved to become immersed in the environment and understand the range of resources, logistical realities, and the concerns of others. Spending 8 to 12 days in the wilderness of the Colorado River through Grand Canyon provided trip participants with opportunities for a deeper level of respect for the resources and the concerns expressed by others involved with the program. The river provided a bond for working and consultative relationships among all of the participants, a relationship that cannot be obtained outside of that environment.

A crew of 12 archeologists and technicians completed the archeological inventory of the Colorado River corridor between Glen Canyon Dam and Separation Canyon in eight months. A total of 475 archeological sites were reported, 336 of them potentially impacted by dam operations. This 255-mile stretch of the Colorado River represents an affected environment of slightly over 10,000 acres at the bottom of the Grand Canyon. This remote and harsh environment, accessible only by boat or foot, was home to thousands of people for thousands of years. Archeological evidence ranges from isolated charcoal lenses exposed in pre-dam flood sediments to masonry structures, roasting features, historic foundations, and trails. Site dates along the river corridor range from archaic to historic, representing ancestral Puebloan, Pai, Paiute, Navajo, and Euroamerican uses of the river corridor.

Impact evaluations were incorporated directly into the impact analysis in the EIS. Using the criteria established in 36 CFR Part 800.9, we were able to clearly identify impacts and recognize the on-going nature of those impacts. Impacts were defined as either direct or indirect. Direct impacts such as inundation have occurred; indirect impacts due to the loss of sediment and arroyo cutting continue to occur. We established the program to allow us to continue to refine our understanding of the physical factors that influence archeological site stability and integrity within the system.

Ethnographic and traditional cultural properties inventories were initiated a little later in the process but were included as part of 106 review. The influence of dam operations on traditional cultural places is an area of concern that has often been overlooked. With the inclusion of Traditional Cultural Properties (TCPs) as a defined National Register property type, evaluation and consideration of impacts on these types of properties needed

to be included. Identification of TCPs was based on information provided through ethnographic research and the knowledge shared by tribal elders and religious leaders who had information related to ancestral uses of the Grand Canyon. The tribes designed and conducted their own ethnographic studies, and incorporated their results directly into the EIS impact evaluations. Tribally based research was another departure from the way in which research had been conducted.

Reclamation, the NPS, Arizona SHPO, and the Council were strongly committed, early in the process, to a programmatic approach to the ongoing resource degradation caused by Glen Canyon Dam. The affected Indian tribes made the same commitment. The Secretary of the Interior made the commitment for the cultural program as the second environmental commitment in the ROD. The Section 106 process worked because both NPS and Reclamation were willing to use it in a very open format, including in discussions all those who needed to be included and working closely with both the SHPO and the Council.

Incorporation of all of the concerns, from both a conservation and preservation perspective, has been critical to the success of the program. Neither Reclamation nor NPS views our role as the minimum legally required. We view our role as incorporating both the letter and the spirit of all of the laws and policies related to preservation of the valuable resources of the Colorado River system. In order to do this, we have had to take a much broader look at both what, and how, we manage. We focussed on what we felt was the right thing to do, using law and policy to guide our approaches to the preservation mandate. Much of this came down to individual commitment to the process. However, without agency backing and legal guidance, we could not have created the program.

Virtually every aspect of the way in which this program has been carried out is unusual. From the initiation of environmental studies in 1982 to the eventual inclusion of cultural studies in 1989 and 1990, this program has attempted to chart a different course when dealing with federal responsibilities. The recognition that federal obligations toward cultural resources affected by Glen Canyon Dam did not stop with completion of the dam was a major victory. Recognition of the role of the tribes as full participants in this program with Reclamation and NPS was also a milestone. The knowledge that tribes were not only concerned with what we typically view as cultural resources was also an important benchmark in this program. The very things that biologists, botanists, and geologists feel are their "natural resources" are often considered "cultural resources" by tribal members. Springs, mineral sources, and medicinal plants can be viewed myopically in the western view as only natural resources, but taken from a cultural perspective, they have a very different meaning and importance. The recognition of this type of philosophy is one of the things that make this program different from most federal compliance projects.

The participating tribes represent a major component of the success of the program. The tribes are not simply interested parties. They are full signatories to the programmatic agreement and have responsibilities to monitoring of traditional resources to tribal specifications. In addition, they are key members of the mitigation efforts, fully participating in the design and implementation of non-site stabilization methods. Erosion control, bank stabilization and redirecting of run-off are part of the on-going program of preservation we employ along the river.

Incorporation of traditional cultural concerns with the physical archeological remains has been a challenge. Our approach to archeological sites has been aided by over 30 years of compliance law and implementation. We know how to evaluate and mitigate sites, how to conserve and preserve. What we are learning through this program is that our notion of "cultural resources" must be broadened if we are to fully realize the concerns of both the agencies and the tribes. If we are truly to evaluate and monitor the health and well-being of the cultural resources of the river corridor, and mitigate impacts to them when we recognize problems, we must incorporate non-traditional means for monitoring. What this means is combining the standard archeological and geomorphic work with the less quantified measures ascribed by the tribes for evaluation to those resources considered traditional to them.

From the traditional archeological survey, to the addition of geomorphic research and traditional cultural places and resources, this program has gone beyond most federal compliance programs. The very notion that conservation is preferable to excavation is novel to many, but it is indeed preferable. Erosion control, stabilization, non-intrusive management actions to preserve these resources, and an on-going consultation process have moved us in a direction rarely seen within either Reclamation or NPS. The Section 106 process has provided the guidance we needed for a successful program.

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